EMERGENCY ACTION PLAN
FOR

MONCHES MILLPOND 38 DAM
(FORMAL NAME)

REVISED 2023

MONCHES DAM
(LOCAL NAME)

W301N9420 COUNTY RD E ~ OCONOMOWOC RIVER SYSTEM
(LOCATION INCLUDING STREET AND STREAM SYSTEM)

COUNTY: WAUKESHA

OWNER: NORTH LAKE MANAGEMENT DISTRICT (NLMD)

CELL: 612-508-3330

OPERATOR: GEORGE E STROBL JR. AND SECRET STROBL

TELEPHONE: 262-966-7325 N/A

CELL: 414-510-2146 608-628-2789

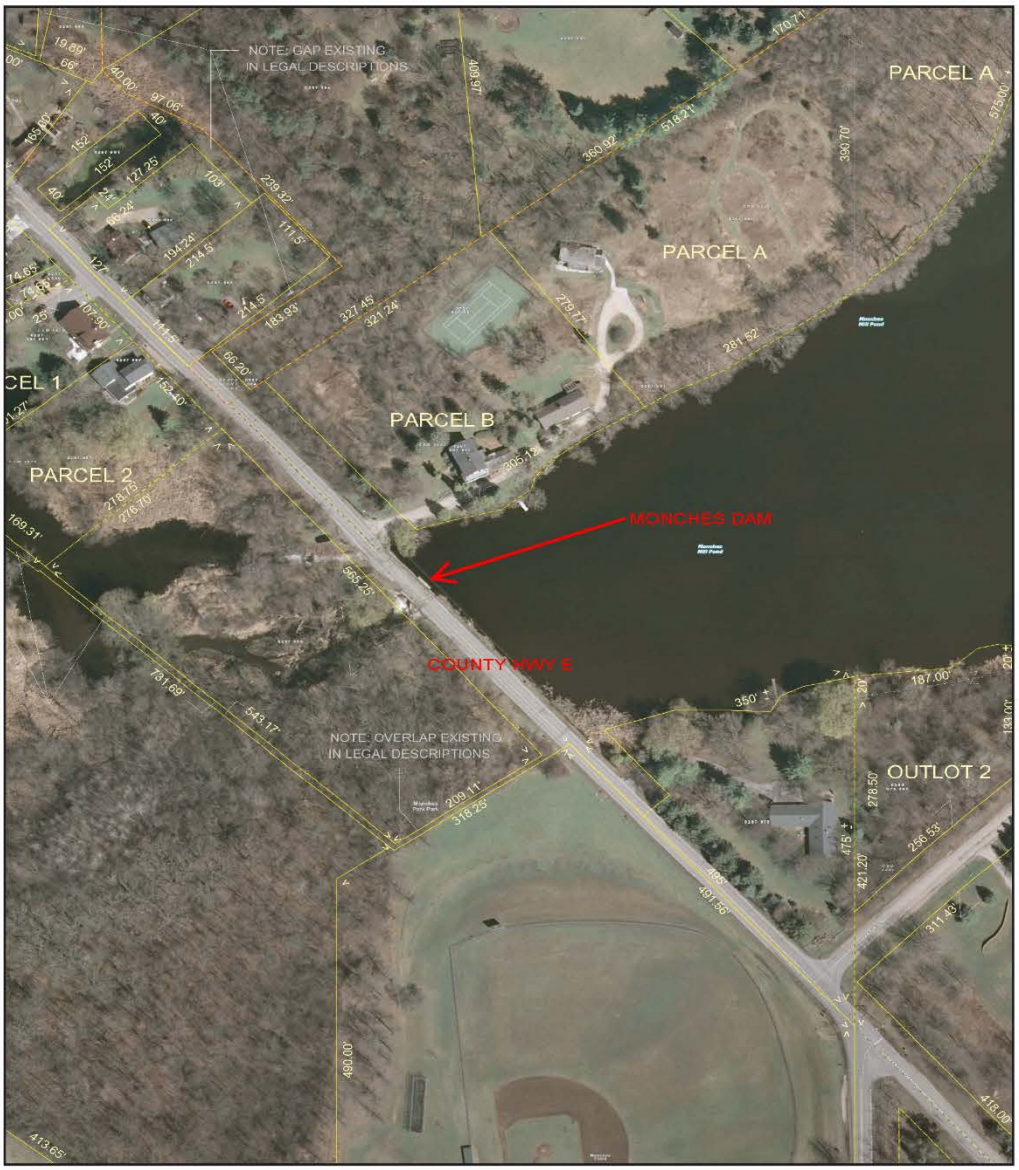
OWNER MAILING ADDRESS: NLMD

PO BOX 33

NORTH LAKE, WI 53064-0033

LAND INFORMATION SYSTEMS DIVISION

Waukesha County GIS Map



Retired Parcels

Plats

- Assessor Plat
- CSM
- Condo Plat
- Subdivision Plat

0 205.15 Feet

Notes: MONCHES DAM ~ W301 N9420 COUNTY RD E

Printed 9/22/2012

Concurrence

By my signature, I acknowledge that I, or my representative, have reviewed this plan and concur with the tasks and responsibilities assigned herein for me and my organization.

1. _____ 10-18-23
Signature *(Dam Owner)* *Date*

Printed name and title: Bridget Essma ~ NLMD Commissioner

2. _____ 10-16-23
Signature *(Dam Operator)* *Date*

Printed name and title: George E. Strobl Jr. – Monches Millpond 38 Dam Operator

3. _____ 10-19-2023
Signature *(Local Law Enforcement)* *Date*

Printed name and title: Eric J. Severson – Waukesha County Sherriff

4. _____ 10/19/23
Signature *(Local Emergency Management)* *Date*

Printed name and title: Gail Goodchild, Coordinator, Waukesha County Office of Emergency Management

5. _____ 10/11/2023
Signature *(Fire Chief)* *Date*

Printed name and title: Josh Paral, Fire Chief, Merton Community Fire Department

6. _____ 10/17/2023
Signature *(Director of Public Works)* *Date*

Printed name and title: Paul Griffin – Town of Merton Director of Public Works

7. _____ 4/5/2024
Approval Signature *(Regional Water Management Engineer)* *Date*

Printed name and title: _ Michelle E M Hase, P.E. Water Management Engineer, Waukesha Regional Office Bureau of Watershed Management, Wisconsin Department of Natural Resources

Concurrence

By my signature, I acknowledge that I, or my representative, have reviewed this plan and concur with the tasks and responsibilities assigned herein for me and my organization.

8. _____

Signature *Organization* *Date*

Printed name and title: State Emergency Hotline – 1-800-943-0003 (24 HOUR) Press "1", Ask for DNR Dudy Officer

9. Secret Strobl 10-16-2023

Signature *Organization* *Date*

Printed name and title: Secret Strobl - Back-Up Dam Operator

10. Donna Hann Town of Merton 10-12-2023

Signature *Organization* *Date*

Printed name and title: Donna Hann – Town of Merton Clerk

Purpose and Intent

The purpose of an Emergency Action Plan (EAP) is to provide the owner/operator of a dam with a clear plan of action when any dam emergency arises. An emergency is identified as any condition which:

- develops unexpectedly;
- endangers the structural integrity of the dam; and
- could result in the dam's failure producing downstream flooding, requiring immediate action.

By writing and implementing an EAP the owner/operator of a dam can reduce the risk of human life loss or injury and minimize property damage during an unusual or emergency event.

This is an EAP for the MONCHES MILLPOND 38 Dam located on the OCONOMOWOC River in TOWN OF MERTON, WAUKESHA COUNTY. The EAP provides a description of the dam and the area at risk as well as contact information for all parties involved in responding to or affected by an emergency at the dam. The EAP outlines what actions are required in the event of an emergency.

Description

[Please provide a brief description of dam. The description should include the type, location and components of the dam as well as the Hazard Rating.]

Type of dam: EARTHEN DAM WITH CONCRETE SPILLWAY AND MULTI LEAF STAINLESS STEEL GATES

Location of dam: COUNTY HWY E

Height of dam: 14 FEET

Size of pool: 20 ACRE-FEET

Number of gates: TWO

Type of gates: MULTI-LEAF (2) GATES

Use of dam: DRAINAGE

Hazard Rating: LOW

Determining the Level of Emergency

It is important to determine the severity of the emergency before responding to an unusual event at a dam. The charts on pages 7 and 8 are to be used to determine the severity of the emergency and to guide the dam owner/operator's actions during an emergency response.

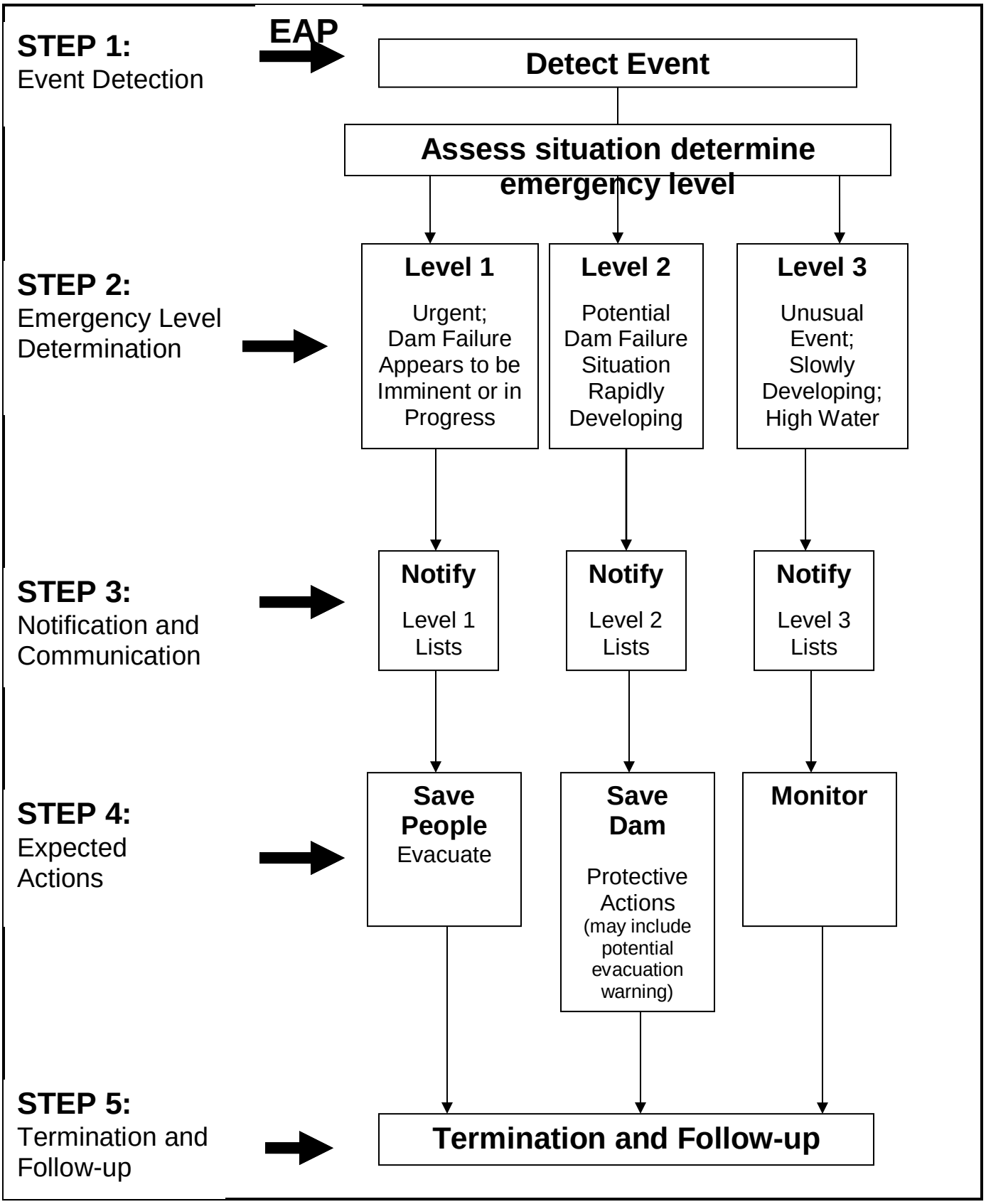
Guidance for Determining the Emergency Level

Event	Situation	Emergency level *
Auxiliary/Earth spillway flow	Reservoir water surface elevation at auxiliary spillway crest or spillway is flowing with no active erosion	3
	Spillway flowing with active gully erosion	2
	Spillway flow that could result in flooding of people downstream if the reservoir level continues to rise	2
	Spillway flowing with an advancing head cut that is threatening the control section	1
	Spillway flow that is flooding people downstream	1
Embankment overtopping	Reservoir level is 1 foot below the top of the dam	2
	Water from the reservoir is flowing over the top of the dam	1
Seepage	New seepage areas in or near the dam	3
	New seepage areas with cloudy discharge	2
	Seepage with cloudy discharge; increasing flow rate	1
Sinkholes	Observation of new sinkhole in reservoir area or on embankment	2
	Rapidly enlarging sinkhole	1
Embankment/ structural component cracking	New cracks in the embankment/structural component greater than ¼-inch wide without seepage	3
	Cracks in the embankment/structural component with seepage	2
Embankment/ structural component movement	Visual movement/slippage of the embankment slope/structural component	2
	Sudden or rapidly proceeding slides of the embankment slopes/structural component	1
Instruments	Instrumentation readings beyond predetermined values	3
Security threat	Verified bomb threat that, if carried out, could result in damage to the dam	2
	Detonated bomb that has resulted in damage to the dam or appurtenances	1
Sabotage/ vandalism	Unauthorized operation of the dam	3
	Damage to dam or appurtenance with no impacts to the functioning of the dam	3
	Modification to the dam or appurtenances that could adversely impact the functioning of the dam	2
	Damage to dam or appurtenances that has resulted in seepage flow	2
	Damage to dam or appurtenances that has resulted in uncontrolled water release	1

* Emergency Level 1: Urgent; dam failure appears imminent or is in progress
* Emergency Level 2: Potential dam failure situation, rapidly developing
* Emergency Level 3: Non-emergency unusual event, slowly developing; high water

NOTE: The *Guidance for Determining the Emergency Level* chart focuses primarily on the earthen components of a dam. Owners should discuss other possible failure scenarios with their consultant. Also, emergency levels may change based on site specific circumstances and discussions with the dam owner's consultant. Structural components may include concrete, wooden and metal components of a dam.

Level of Emergency Determination Chart



Emergency Action Plan Notification Flowchart

The purpose of the EAP Notification Flowchart is to provide a visual map of who is to be notified, the order of notification, and who is responsible for notifying various individuals and agencies/organizations. The Notification Flowchart can be customized based on the level of emergency as determined under the Level of Emergency Determination Chart.

The Agency/Organization Notification List should be used as a quick reference for contact information for the Notification Flowchart. It can be customized based on the level of the emergency.

The MONCHES MILLPOND 38 Dam Emergency Action Plan Notification Flowchart can be found on page 8 and was last updated on the date shown on the bottom of the page. The Agency/Organization Notification List can be found on page 15 and was last updated on the date shown on the bottom of the page. The Notification Flowchart will be activated with a telephone call to George Strobl. Contact with Waukesha County Sheriff and will be maintained throughout the dam emergency by 911 (or 262-446-5070) via cell phone. See Appendix B for the Emergency Communication Plan.

Hydraulic Shadow Map

The purpose of the Hydraulic Shadow Map is to provide a picture of the area that would be affected by a complete failure of the dam in order to determine who must be notified and/or evacuated in an emergency. The Hydraulic Shadow Map should clearly identify residences, businesses, storage facilities, bridges, downstream dams and other structures such as roads, power lines, sewer, gas and water lines and other infrastructure that could be affected by the failure of the dam.

The Hydraulic Shadow Map for MONCHES MILLPOND 38 Dam was produced by Hey & Associates (Now R. A. Smith) based on the information from the Dam Failure Analysis and correlated with Waukesha County Flood Insurance Study dated January 19, 2012, see Appendix A. The Map can be found on page 13 and was last updated on the date shown on the bottom of the page. For further information on the method used to produce the map, please contact: Kevin Yanny (Waukesha County).

(If map is estimated) The Hydraulic Shadow Map for MONCHES MILLPOND 38 Dam was produced by Hey & Associates (Now R. A. Smith) and estimated based on April 17, 2006

DAM FAILURE ANALYSIS AND PROPOSED DAM CAPACITY ANALYSIS. The Map as modified can be found on page 13 and was last updated on the date shown on the bottom of the page. For further information on the method used to produce the map, please contact: Kevin Yanny (Waukesha County).

Emergency Notification Lists

Emergency Notification Lists are lists of the names, addresses and telephone numbers of individuals, businesses, critical facilities and other entities who would be affected by a failure of the dam and who must be notified and/or evacuated in an emergency. The lists have been grouped based on the severity of the emergency. The Emergency Notification Lists for the MONCHES MILLPOND 38 Dam can be found of page(s) 14 thru 17 and were last updated on the date shown on the bottom of the page.

Available Resources Chart

During an emergency, dam owners/operators may need to bring in outside resources such as such as heavy equipment, sandbags, pumps, siphons or divers. A listing of the resources including provider names, addresses and telephone numbers available to the owner/operator of the MONCHES MILLPOND 38 Dam can be found on page 15 and was last updated on the date shown on the bottom of the page.

MONCHES MILLPOND 38 DAM EMERGENCY ACTION PLAN NOTIFICATION FLOWCHART

George Strobl - 262-966-7325
Secret Strobl – 608-628-2789
Bridget Essma – 612-508-3330
Walter Schaeffer – 262-442-5259
Don Reinbold – 262-510-6113

→ Waukesha County Sheriff

DNR Dam Safety *

State Emergency Hotline (24 hour)
(800) 943-0003 Press 1
Ask for the DNR Duty Officer *

→ ***Wisconsin DNR Duty Officer***
(608) 576-5358 (cell)
(608) 376-9049 (pager) *

→ ***National Weather Service ****

Emergency Management Coordinator
Waukesha Emergency Management
Emergency Management Coordinator
262-548-7580

Paul Griffin Town of Merton
Director of Public Works
262-966-2118

Donna Hann
Town of Merton Clerk
Office: 262-966-2651

Josh Paral
Fire Chief
Merton Community Fire
Department
262-538-2300

Hartland Emergency Management

Downstream Police Departments
Merton (Contract w/Sheriff)- 262-446-5070
Stone Bank (Contract w/Sheriff)- 262-446-5070
Okauchee (Contract w/Sheriff)- 262-446-5070
Oconomowoc 262-567-4401

Waukesha Health Department
262-548-7212 8:00 – 4:30 pm, M-F
After hrs. 211 or 414-455-1736 or
866-211-3380

American Red
Cross 833-583-3111

Diggers Hotline
800-242-8511

→ WEnergies
Electrical Outage 800-662-4797
Gas Leak 800-261-5325

Upstream/Downstream Residents

Emergency Management Office
1621 Woodburn Rd. Waukesha
262-548-7580

Note: This is a generalized Notification Chart. Please coordinate with the Local Emergency Manager to identify situations specific to your dam. All items marked with an asterisk must be included in a final Notification Flowchart.

Agency/Organization Notification List for Notification Flowchart

Agency/Organization	Principal contact	Address	Office telephone #	Alternate telephone #	Email Address

Prepared by the Waukesha County Department of Parks and Land Use

- Dam in Place/Dam Nonexistent Floodplain
- Hydraulic Flood Shadow (Proposed Floodway)
- Floodplain from 2008 FEMA DFIRM Maps
- FIS Cross Sections

OCONOMOWOC RIVER & MONCHES DAM FAILURE ANALYSIS

WAUKESHA COUNTY, WISCONSIN

1 inch = 500 feet

0 250 500 1,000 Feet

N W E S

Date of Orthophotograph/Topography: April 2010
Date of Cadastral Basemap: September 30, 2011

Level of Emergency 1 Notification List

#	Name	Address	Telephone #	Critical Facility (Y/N)
1	George Strobl Jr.	W298N9442 Hartley Rd Hartland, WI 53029	262-966-7325 Cell: 414-510-2146	
2	Secret Strobl	W302N9527 O'Neil Rd Hartland, WI 53029	Cell: 608-628-2789	
3	Waukesha County Sheriff	Eric Severson Waukesha County Sheriff	911	
4	Bridget Essma	PO Box 33 North Lake, WI 53064-0033	Cell: 612-508-3330	Y
5	Walter Schaeffer	N25W22454 Ridgewood Ln Waukesha, WI 53186	262-547-3250 Cell: 262-442-5259	
6	STATE EMERGENCY HOTLINE		1-800-943-0003 (24 Hour) Press "1", Ask for DNR Duty Officer	
7	Gail Goodchild, Coordinator, Waukesha County Office of Emergency Management	1621 Woodburn Road Waukesha, WI 53188	Cell: 414-324-1679 262-446-5070	
8	Don Reinbold	N73 W32385 River Road 262-966-2049 Hartland, WI 53029	262-966-2049 Cell: 262-510-6113	
9	Josh Paral	Fire Chief, Merton Community Fire Department	262-538-2300 Cell: 262-993-1080	
10	Paul Griffin	Town of Merton Director of Public Works	Cell: 262-966-2118	
11	Tim Klink	Town of Merton Chairman W339N9280 Townline Rd Oconomowoc, WI 53066	262-966-7341	
12	Michelle M. Hase, PE	Water Management Engineer, WI DNR	Cell: 262-282-0447	
13	Uriah Monday, PE	State Dam Safety Engineer, WI DNR	Office: 608-225-6716	

14	DNR Officer on Duty	State Emergency Hotline	800-943-0003 Press “1” and ask for DNR Duty Officer	
15	Donna Hann	Town of Merton Clerk	Office: 262-966-2651	
16	Don Cull	Don Cull Excavating W298 N9248 Center Oak Rd Hartland, WI 53029	262-966-7038	
17	Kevin Yanny and/or Nate Beth	Waukesha County Public Works Department 1320 Pewaukee Road Waukesha, EI 53188	262-548-7750 nbeth@waukeshacounty.gov	
18	Micah Heidel	Radtke Contractors 6408 Cross Road Winneconne, WI 54986	920-582-4114 Cell: 920-456-9366 mheidel@radtkecontractors.com	

#	Name	Address	Telephone #	Critical Facility (Y/N)
1	George Strobl Jr.	W298N9442 Hartley Rd Hartland, WI 53029	262-966-7325 Cell: 414-510-2146	
2	Secret Strobl	W302N9527 O'Neil Rd Hartland, WI 53029	Cell: 608-628-2789	
3	Waukesha County Sheriff	Eric Severson Waukesha County Sheriff	911	
4	Bridget Essma	PO Box 33 North Lake, WI 53064-0033	Cell: 612-508-3330	Y
5	Walter Schaeffer	N25W22454 Ridgewood Ln Waukesha, WI 53186	262-547-3250 Cell: 262-442-5259	
6	STATE EMERGENCY HOTLINE		1-800-943-0003 (24 Hour) Press "1", Ask for DNR Duty Officer	
7	Gail Goodchild, Coordinator, Waukesha County Office of Emergency Management	1621 Woodburn Road Waukesha, WI 53188	Cell: 414-324-1679 262-446-5070	
8	Don Reinbold	N73 W32385 River Road 262-966-2049 Hartland, WI 53029	262-966-2049 Cell: 262-510-6113	
9	Josh Paral	Fire Chief, Merton Community Fire Department	262-538-2300 Cell: 262-993-1080	
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11	Tim Klink	Town of Merton Chairman W339N9280 Townline Rd Oconomowoc, WI 53066	262-966-7341	
12	Michelle M. Hase, PE	Water Management Engineer, WI DNR	Cell: 262-282-0447	
13	Uriah Monday, PE	State Dam Safety Engineer, WI DNR	Office: 608-225-6716	

Level of Emergency 3 Notification List

#	Name	Address	Telephone #	Critical Facility (Y/N)
1	George Strobl	W298N9442 Hartley Rd. Hartland, Wis. 53029	262-966-7325 414-510-2146	Y
2	Secret Strobl	W302N9527 O'Neil Rd. Hartland, Wis. 53029	Cell: 608-628-2789	Y
3	Bridget Essma	PO Box 33 North Lake, WI 53064-0033	Cell: 612-508-3330	Y
4	Walter Schaeffer	N25W22454 Ridgewood Lane Waukesha, WI 53186	262-547-3250 Cell 262-442-5259	Y
5	Don Reinbold	N73W32385 River Rd. Hartland, Wisconsin 53029	262-966-2049 Cell 262-510-6113	Y

Available Resources Chart		
Heavy equipment service and rental	**Sand and gravel supply**	**Ready-mix concrete supply**
Pumps/Siphons	**Diving Contractor**	**Sand Bags**
Additional Resources	**Additional Resources**	**Additional Resources**

Reentry and Recovery

The emergency at the MONCHES MILLPOND 38 Dam will not be considered over until inspected by Ayers Associates, Inc. /Kevin Yanny (Waukesha County) and the County of Waukesha Emergency Management Official and the County of Waukesha Sheriff's Department have been consulted. The DNR Regional Water Management Engineer will be contacted for technical assistance if needed. Evacuated residents will be allowed to return based on the plan developed by the County of Waukesha Emergency Management Official and the County of Waukesha police department.

Once the emergency is declared over, Ayers Associates, Inc. /Kevin Yanny (Waukesha County) will inspect the dam for any damage. A post-disaster review of the inspection will be held with the DNR Regional Water Management Engineer to determine what actions may be needed to ensure that the dam is in compliance with state standards. The review may result in formal orders issued to the dam owner and may require the submittal of plans and specifications for repair.

After Action Review

After a dam emergency is ended, a review of the event should take place as soon as practicable. (If the review does not take place within 45 days of the dam emergency, valuable data may be lost.) The review will determine what was done correctly during the EAP activation, what was done incorrectly and what could be improved. Any needed changes to the MONCHES MILLPOND 38 Dam EAP will be made by NLMD. An updated EAP including an updated Approval/Concurrence will be provided to all holders of the EAP, the State Dam Safety Engineer and the DNR Regional Water Management Engineer. A copy of the updated EAP will be kept by NLMD, owner of the MONCHES MILLPOND 38 Dam and George Strobl/Secret Strobl, operator of the MONCHES MILLPOND 38 Dam. A copy of the updated EAP will be posted in any structure located at the MONCHES MILLPOND 38 Dam.

Training, Testing and Annual Review

The purpose of an annual review of the EAP and training for dam owners and operators is to ensure that all contact information listed is accurate and that dam personnel are familiar with the EAP and understand their role in responding to a dam emergency. The annual review of and training for the MONCHES MILLPOND 38 Dam's EAP will occur

during the month of June, July or August. Based on changes identified in the annual review, copies of updated pages will be provided to all holders of the EAP. A copy of the most current EAP will be kept by NLMD, owner of the MONCHES MILLPOND 38 Dam and GEORGE E STROBL JR, SECRET STROBL operator of the MONCHES MILLPOND 38 Dam. A copy of the most current EAP will be posted in any structure located at the MONCHES MILLPOND 38 Dam.

At least every five (5) years, the owner/operator of the MONCHES MILLPOND 38 Dam will meet with the County of Waukesha Emergency Management Official to discuss what changes have been made to the County All Hazards Emergency Response/ Operations Plan and to determine what opportunities exist for exercises. Also, the owner/operator of the MONCHES MILLPOND 38 Dam will review the dam failure (hydraulic shadow) map to identify any significant land use changes in the hazard area. If changes have occurred then the dam owner/operator should notify the DNR Regional Water Management Engineer.

The dam owner/operator should work with local emergency management to determine what opportunities exist to conduct or participate in dam related EAP exercises.

RECOMMENDED EAP APPENDICES

Supporting Narrative and Documentation
IOM
Dam plan and section
Dam Failure Analysis Profiles
Emergency Communication Plan
Glossary of Terms

DOCUMENT APPENDICES

Appendix A: DNR Regional Water Management Engineers
Appendix B: Communication Documentation Chart
List of Holders of the Emergency Action Plan
Receipt of the Emergency Action Plan/Emergency Action Plan Updates Chart
Glossary of Terms

Communication Documentation Chart for MONCHES Dam

Date	Time	Person contacted	Method of contact	Reason for contact
	AM PM			
	AM PM			
	AM PM			
	AM PM			
	AM PM			
	AM PM			
	AM PM			
	AM PM			
	AM PM			

List of Holders of the Emergency Action Plan for MONCHES MILLPOND 38 Dam

#	Name	Address	Telephone #

Receipt Confirmation Chart

Emergency Action Plan/ Emergency Action Plan Updates

#	Name	Address	Date of Re

GLOSSARY OF TERMS

Abutment – That part of the valley side or concrete walls against which the dam is constructed. An artificial abutment is sometimes constructed where there is no suitable natural abutment. Right and left abutments are those on respective sides of an observer when viewed looking downstream. The wall between a spillway or gate structure and the embankment can also be referred to as an abutment.

Alterations – Such changes in the design of the dam as may directly affect the integrity of the dam and thereby affect the safety of persons, property or natural resources.

Appurtenant Structures – The structures or machinery auxiliary to dams which are built to operate and maintain dams; such as outlet works, spillway, powerhouse, tunnels, etc.

Auxiliary Gate- A stand by or reserve gate used only when the normal means of water control is not available or at capacity.

Auxiliary Spillway (Emergency Spillway) - A secondary spillway designed to operate only during exceptionally large floods.

Boil - An upward disturbance in the surface layer of soil caused by water escaping under pressure from behind or under a water-retaining structure such as a dam or a levee. The boil may be accompanied by deposition of soil particles (usually silt) in the form of a ring (miniature volcano) around the area where the water escapes.

Breach – An opening or a breakthrough of a dam sometimes caused by rapid erosion of a section of earth embankment by water. Dams can be breached intentionally to render them incapable of impounding water.

Conduit - A closed channel to convey the discharge of water through or under a dam.

Core – A zone of material of low permeability in an embankment dam.

Corewall - A wall built of impervious material, usually of concrete or asphaltic concrete in the body of an embankment dam to prevent leakage.

Crest of Dam - The crown of an overflow section of the dam. In the United States, the term "crest of dam" is often used when "top of dam" is intended. To avoid confusion, the terms crest of spillway and top of dam should be used in referring to the overflow section and dam proper, respectively.

Cutoff Wall - A wall of impervious material (e.g., concrete, asphaltic concrete, steel sheet piling) built into the foundation to reduce seepage under the dam.

Dam – A barrier built for impounding or diverting the flow of water.

Dike (Levee) – An embankment, usually applied to embankments or structures built to protect land from flooding.

Drain, Layer or Blanket – A layer of pervious material in a dam to facilitate drainage. Includes toe drain, weephole and chimney drain.

Drawdown – The resultant lowering of water surface level due to release of water from the impoundment.

Embankment – Fill material, usually earth or rock, placed with sloping sides.

Embankment Dam (Earth Dam / Earthfill Dam) - Any dam constructed of excavated natural materials, usually earth or rock, placed with sloping sides.

Emergency Action Plan – A predetermined plan of action to be taken to reduce the potential for property damage and loss of lives.

Energy Dissipater - Any device constructed in a waterway to reduce or destroy the energy of fast-flowing water.

Engineer/Consultant – A licensed or registered engineer in a given state; offers experience and expertise in the design and inspection of dams.

Failure – An incident resulting in the uncontrolled release of water from a dam.

Foundation of Dam - The natural material on which the dam structure is placed.

Freeboard – The vertical distance between a stated water level and the top of a dam.

Gate or Valve – In general, a device in which a leaf or member is moved across the waterway to control or stop the flow.

Gravity Dam - A dam constructed of concrete and/or masonry that relies on its weight for stability.

Groin - That area along the contact (or intersection) of the face of a dam with the abutments.

Height of Dam - The vertical measurement expressed in feet as measured from the downstream toe of the dam at its lowest point to the elevation of the top of the dam.

Hydraulic Shadow Map - A map delineating the area that would be inundated in the event of a dam failure.

Impoundment – Water or wastewater held back by a dam.

Maintenance – The upkeep necessary for efficient operation of dams and their appurtenance works. It involves labor and materials, but is not to be confused with alterations or repairs.

Masonry Dam - Any dam constructed mainly of stone, brick or concrete blocks that may or may not be joined with mortar. A dam having only a masonry facing should not be referred to as a masonry dam.

Ogee Spillway (Ogee Section) - An overflow weir in which in cross section the crest, downstream slope, and bucket have an "S" or ogee form of curve. The shape is intended to match the underside of the nappe at its upper extremities.

One percent/One Hundred Year (100-YEAR) Flood -The flood magnitude expected to be equaled or exceeded on the average of once in 100 years. It may also be expressed as an exceedance frequency with a 1% chance of being exceeded in any given year.

Operator – The owner, or an agent or employee of the owner.

Outlet – An opening through which water can freely discharge for a particular purpose from an impoundment.

Owner – Any person, who owns, leases, controls, operates, maintains or manages a dam or impoundment.

Phreatic Surface – The upper surface of saturation in an embankment.

Piping – The progressive development of internal erosion by seepage, appearing downstream as a hole or seam discharging water that contains soil particles.

Plunge Pool – A natural or sometimes artificially created pool that dissipates the energy of free-falling water. The pool is located at a safe distance downstream of the structure from which water is being released.

Primary Spillway (Principal Spillway) - The principal or first used spillway during flood flows.

Repair – To essentially restore a dam to its approved design condition.

Riprap – A layer of large stones, broken rock or precast blocks placed in a random fashion on the upstream slope of an embankment dam, on a reservoir shore, or on the side of a channel as a protection against wave and ice action.

Scarp - The nearly vertical, exposed earth surface created at the upper edge of a slide or a breached area along the upstream slope of an earthen embankment.

Seepage - The movement of water that may take place through the dam, its foundations, or its abutments.

Slide - The movement of a mass of earth fill down a slope. In embankments and abutments, this involves the separation of a portion of the slope from the surrounding material.

Slump Area – A portion of earth embankment which moves downslope, sometimes suddenly, often with cracks developing.

Spillway - A structure over or through which flood flows are discharged. If the flow is controlled by gates, it is considered a controlled spillway; if the elevation of the spillway crest is the only control, it is considered an uncontrolled spillway.

Spillway Channel - A channel conveying water from the spillway crest to the river downstream.

Stilling Basin – A basin constructed to dissipate the energy of fast-flowing water, e.g., from a spillway or bottom outlet, and to protect the river bed from erosion.

Stoplogs – Logs or timbers, steel or concrete beams placed on top of each other with their ends held in guides on each side of a channel or conduit.

Storage - The retention of water or delay in runoff either by planned operation, as in a reservoir, or by temporarily filling the overflow areas, as in the progression of a flood crest through a natural stream channel.

Tailwater Level - The level of water in the discharge channel immediately downstream of the dam.

Toe of Dam - The junction of the downstream face of a dam with the ground surface. Also referred to as the downstream toe. For an embankment dam, the junction of the upstream face with the ground surface is called the upstream toe.

Toe of Embankment – The junction of the face of the dam with the ground surface.

Top of Dam - The elevation of the uppermost surface of a dam, usually a road or walkway, excluding parapet wall, railings, etc.

Trash Rack – A structure of metal or concrete bars located in the waterway at an intake to prevent the entry of floating or submerged debris.

Valve - In general, a device fitted to a pipeline or orifice in which the closure member is either rotated or moved transversely or longitudinally in the waterway so as to control or stop the flow.

Weir - A low dam or wall built across a stream to raise the upstream water level. Termed fixed-crest weir when uncontrolled. A structure built across a stream or channel for the purpose of measuring flow. Sometimes described as a measuring weir or gauging weir. Types of weirs include broadcrested weirs, sharpcrested weirs, ogee weirs, and V-notched weirs.